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ABSTRACT

A study determining whether parents' possession of a college degree influenced the adult attainments of their progeny is presented. Techniques of path analysis were utilized to investigate both the direct and indirect effects of parents' college graduation on children's income, educational attainment, and occupational status. Separate estimations of a theoretical model for subjects in four racial-gender groups permitted the determination of any intergroup differences. The 15 variable block recursive model developed for estimation in the study included five categories of variables: student background characteristics; precollege variables; institutional characteristics; measures of the collegiate experience; and income, educational attainment, and occupational status 9 years after matriculation in college. Data were drawn from responses to the 1971 and 1980 surveys of the Cooperative Institutional Research Program. Out of a possible 24 direct effects of parental education measures, only two significant effects were obtained. Parents' college education was found to affect the next generation by significant indirect paths. The vast majority of significant indirect effects were obtained for the white groups. Results of the study provide empirical support for the establishment of parent education programs. They also seem to support the development of early home intervention programs, especially those directed toward minority mothers without college education. Results suggest the importance of college faculty in the transmission of intergenerational status attainments. Contains 57 references and 14 tables. (SM)

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Intergenerational Effects of
Parents' College Graduation:
Comparative Path Analyses for
Four Racial-Gender Groups

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Research on college effects (e.g., Feldman and Newcomb, 1969; Lacy, 1978; Weidman, 1984; Pascarella, 1985) has attempted to discern the manner in which various outcomes are affected by the college experience. The focus of the majority of these studies has been the more immediate impact of college on student development. There has been a dearth of studies that elucidate the more enduring effects of a college education.

Recent college effect studies have been based on the formulation of conceptual models comprised of three components: student input characteristics, the institutional environment, and student outputs (Astin, 1970). The methodological difficulties of many earlier studies have thus been addressed (Astin, 1972). The majority of these more recent studies have focused on environmental influences and student outputs.

Although not the focus of most college effect studies, student background characteristics have usually been included as exogenous variables. The student attributes most typically specified have been ascribed characteristics: race, sex, and family socioeconomic status (SES). Operational definitions of SES have traditionally employed combinations of measures: parental level of education and combined parental income (Pascarella et al., 1986; Pascarella et al., 1987); parental education, family income, and father's occupational status (Smart, 1986); and family income, parental education, father's occupational prestige,

and household possessions (Griffin and Alexander, 1978; Velez, 1985). Typically, multiple indicators such as these have been standardized and combined to derive a single index for use in causal modeling procedures. The importance of indirect effects of family SES on subsequent status attainment outcomes has been substantiated by Smart and Pascarella (1986) and Smart (1986).

Studies in which family SES has been disaggregated to yield separate measures for father's and/or mother's education have yielded information on the association between parental education and children's educational attainment (Blau and Duncan, 1967; Sewell and Shah, 1968), occupational status (Tinto, 1980; McClendon, 1976), and income (Wachtel, 1975; Rumburger, 1983). Intergenerational effects of education such as these have been discussed by researchers who espoused a more comprehensive view of educational outputs (i.e., Bowman, 1962; Weisbrod, 1962; Cobern et al., 1972; Cohn and Geske, 1986), including among them the deferred returns that are only gained by the future family of the subject (Bowman, 1962). Such social benefits could potentially be transferred across multiple generations, leading to multiplication of advantages (Bowen, 1977). Policy-makers have frequently neglected to consider the long-term effects of education in their decision-making about allocation of resources (Weisbrod, 1962).

The specific effects derived from mother's or father's

possession of a college education have been the topic of very few research studies (Swift and Weisbrod, 1965; Ellis et al., 1971; Leibowitz, 1974; Christensen et al., 1975; Thomas et al., 1979). Extant studies are limited by their experimental design and data analytic methods.

The most sophisticated research design and analysis related to the influence of parents' college graduation may have been employed by Christensen et al. (1975). Variables potentially explaining males' and females' decision to attend college were estimated using the maximum likelihood estimation of probit analysis. Mother's college graduation was found to have a larger impact on college attendance for females than was father's. (Mother's education was excluded in the regression for males.) The effect of father's college graduation was the same for subjects of both sexes. The findings of Leibowitz (1974) also substantiated the importance of a mother's college education. Estimation of a causal model showed the educational advantage of having a mother who was a college graduate: educational attainment was increased by .60 year for males and .68 year for females (in 1950).

In summary, few studies have addressed the specific effects of parents' college graduation on the attainments of their progeny. The intergenerational effects of college graduation are in serious need of description and quantification.

The purpose of the present study was to determine whether parents' possession of a college degree influenced the adult attainments of their progeny. Techniques of path analysis were utilized to investigate both the direct and indirect effects of mother's and father's college graduation on children's subsequent educational attainment, occupational status, and income. Separate estimations of a theoretical model for subjects in four racial-gender groups permitted the determination of any intergroup differences.

Causal Model

The fifteen variable block recursive model developed for estimation in this study included five categories of variables: (1) student background characteristics (father's and mother's possession of a college degree, parental income); (2) precollege variables (high school academic achievement, high school social involvement, educational aspirations, occupational aspirations); (3) institutional characteristics (selectivity, size); (4) measures of the collegiate experience (collegiate major, college academic achievement, social leadership); and (5) educational attainment, occupational status, and income 9 years after matriculation in college. The general structure of this model was derived from the college effect models estimated by Smart and Pascarella (1986) and Smart (1986).

The principal dependent variables in the proposed model are educational attainment, occupational status, and income.

It is hypothesized that student background characteristics influence precollege variables which in turn affect both the college environment chosen and the nature of the collegiate experience. All of these factors determine educational attainment, the status of the current occupation, and ultimately, income.

Specific variables are included in the model primarily because of the findings of related research on status attainment processes and college effects. Measures of educational and occupational aspiration have been included in causal models of the status attainment process since the late 60s (Sewell et al., 1969; 1970). The theoretical relationship between aspirations and status has been succinctly explained by Haller (1982): aspirations "guide one's selection among status opportunities encountered and determine activities toward which one's energies will be directed" (p. 6).

The college effects model investigated by Smart and Pascarella (1986) demonstrated the primarily indirect influence exerted by educational aspirations on students' adult SES. In the present model, it is hypothesized that student aspirations serve as important intervening variables linking parental educational background and subsequent individual attainments.

Institutional characteristics of the selected college comprise a group of variables that are also included in the

proposed model based on the findings of related research. The selectivity of a college has been shown by Smart and Pascarella (1986) to have a central role "as the primary institutional characteristic mediating the indirect effects of the exogenous precollege characteristics in the equations for all four [racial-gender] groups" (p. 544). Attendance at an elite institution may be the mechanism by which students of "advantaged" background (re. parental education) receive still further advantages (Karabel and Astin, 1975).

The collegiate academic major has been included in prior studies of college effects because of its role as an important determinant of the social and intellectual experiences available to students (Jacobs, 1986). The influence of major on occupational status attainments (Daymont and Andrisani, 1984; Cohn and Geske, 1986) has also dictated its inclusion in causal models. The work of Smart and Pascarella (1986) substantiated the importance of academic major as an intervening variable mediating the effects of family background on students' socioeconomic status attainments.

The research purpose of the present study required that separate variables be used to operationalize each parent's graduation or non-graduation from college. Such a designation represents a major departure from existing research, which typically defines parental education as years of formal education completed (Spaeth, 1968; Wachtel, 1975;

Sewell et al., 1980).

Consistent with the findings of Smart (1986) and Smart and Pascarella (1986), it is expected that parents' possession of a college degree will indirectly influence their children's educational attainment, occupational status, and income. (It is hypothesized that any direct effects on the three outcome variables will be minimal.) Because of the social pattern inherent in United States society, it is expected that father's and mother's educational influence will differ for male and female offspring. Likewise, it is hypothesized that this parental influence will differ for U.S. racial groups.

Method

Sample

Data for the current research were drawn from the responses to the 1971 and 1980 surveys of the Cooperative Institutional Research Program (CIRP). The design of the CIRP surveys (Astin, 1982) has made it possible to obtain national data descriptive of students enrolled in colleges: their family background characteristics, characteristics of their precollege experiences, students' higher educational experiences, attitudes, values, and goals. Follow-up data collected after graduation have included many of these same measures, in addition to new information on postgraduate education and work experience.

The CIRP data utilized in the present research were

obtained from students surveyed both in 1971 (as college freshmen) and again in 1980. Approximately one-fifth of the 10,326 respondents to the CIRP surveys met the criteria for selection as subjects. The sample was limited to those respondents who attended only one four year college or university as first time matriculants. This restriction was necessary in order to unambiguously assess influences on the college experience. [The 1980 CIRP follow-up survey asked respondents to evaluate the last undergraduate institution attended. Data on institutional characteristics were available only for the first (1971) institution.] Other restrictions placed on subjects were their matriculation in college as freshmen in 1971, and full time membership in the work force in 1980. Analyses were performed on a final sample of 2,539 black and white respondents who met the selection criteria and for whom values on all requisite variables had been specified. (Out of 3,448 subjects that fulfilled all selection criteria, 909 were deleted from the sample due to omitted values on one or more variables.)

A .01 critical alpha level was used in the analyses for white males and females. The .05 critical value was used in analytic procedures involving black males and females because of the smaller sample sizes for the minority groups.

Variables

The model estimated in this study consisted of five categories of variables ordered in a causal sequence:

1. Student background characteristics: father's education, mother's education, and parental income (within this block of variables father's and mother's education were considered causally prior to parental income);
2. Precollege variables: high school academic achievement, high school social involvement, educational aspirations (1971), and occupational aspirations (1971);
3. Institutional characteristics: selectivity and size of the 1971 college;
4. College experience variables: collegiate major, college academic achievement, and social leadership (college major was considered causally antecedent to the other two variables);
5. Outcome measures: educational attainment (1980), occupational status (1980), and income (1980) [these variables were ordered in sequence as listed above].

Table 1 provides operational definitions of all of the variables included in the model.

Analyses

Preliminary analyses were conducted to determine the existence of any significant racial-gender differences in the prediction of the ultimate dependent variable. [These differences were expected based on the results of prior research (Astin, 1977; Pascarella, et al., 1987).] Grouping

male subjects, income was regressed on all 14 antecedent variables plus a set of cross-product terms of race and each predictor. Combining female subjects, income was similarly regressed on all 14 antecedent variables plus cross-product terms of race and each predictor. In the latter case, a significant increase in the amount of variance explained indicated that the model needed to be estimated separately for black and white females.

In another preliminary analysis, white subjects were grouped together, with income being regressed on all antecedent variables plus cross-product terms including sex and each predictor. This same regression procedure was also employed for the total group of black subjects. In both instances, a significant interaction effect with sex was indicated by a significant increase in the amount of variance explained. Based on the combined results of all preliminary analyses, separate estimations of the model were made for four racial-gender groups. Subsequent data analytic procedures were performed on a final sample of 2,539 respondents (1,090 white males, 983 white females, 182 black males, and 284 black females).

To address the identified research purpose, ordinary least squares multiple regression analysis was employed to solve structural equations implied by the paths of the general causal model. Beta weights so obtained represented direct causal effects. Indirect causal effects were

computed as the sum of the products of the direct effects, using the FORTRAN program GEMINI (Wolfe and Ethington, 1985). The statistical significance of the indirect effects was also determined by the GEMINI program. Total causal effects were obtained by summing the direct and indirect effects. By means of the analyses employed, it was possible to derive conclusions about any significant influences, direct and indirect, which the parental education variables might exert on the outcome measures.

Results

Tables II and III present the means, standard deviations, and intercorrelations for all variables included in the model, as estimated for the four racial-gender groups. Subsequent analytic procedures were based on these data.

Tables IV through VII present the structural equations for the four racial-gender groups. The standardized (metric) coefficients shown in these tables represent the direct effects of each predictor variable on the dependent measure, holding constant all other predictor variables. The variables in the model explained from 10% to 29% of the variance in income (for white males and black females, respectively). With respect to the occupational status of the subject's job in 1980, variance explained ranged from 21% (for black females) to 37% (for white males). The model variables explained from 25% to 39% of the variance in educational attainment (for black females and both white and

black males, respectively).

Tables VIII through X present the direct, indirect, and total effects of mother's and father's education on the three outcome measures. Results for the four racial-gender groups are combined in each table.

Tables XI through XIII present the indirect and total effects of all model variables on the three dependent variables of interest. This method of presentation of results facilitates comparison of the relative effect of parental education variables (versus other variables) between and within groups. The rank ordering of significant total effects is based on values of the standardized effects.

In order to address the research questions, results will be discussed according to influences on the three dependent measures of interest: educational attainment, occupational status, and income. The results will be organized to show the nature of the direct, indirect, and total effects for each dependent variable. Comparisons between racial and gender groups will also be specified. In particular, results will be presented to highlight their relationship to the intergenerational effects of a college education.

Educational Attainment

As revealed by Equation 13 in Tables IV through VII, two variables had significant direct effects on educational attainment for all four racial-gender groups. The significant influence of institutional selectivity and

college academic achievement was manifest as positive beta weights for all four groups. Educational aspirations exerted a significant direct effect on educational attainment for both groups of white subjects (males and females). College leadership involvement exerted significant direct effects for both female groups (white and black).

Several precollege experience variables exerted significant positive direct effects on educational attainment for only one group. Occupational aspirations directly influenced educational attainment for the white male subjects. High school academic achievement exerted a significant direct influence on educational attainment only for the black female subjects.

In only one racial-gender group did a measure of parental education exert a significant direct effect on educational attainment at the pre-determined level of significance. For the black males studied, mother's possession of a college degree directly enhanced the subjects' own educational attainment ($p=.047$).

Table VIII provides a presentation of indirect and total effects of parental education variables on educational attainment. Mother's and father's possession of a college degree exerted significant indirect effects on educational attainment for both white groups, males and females.

For the white males, father's education exerted an influence on educational attainment through the following

major mediating variables: educational aspirations, occupational aspirations, and selectivity of the college attended. The indirect effect of mother's education was mediated by parental income and institutional selectivity.

For the white females, father's education indirectly influenced educational attainment through the selectivity of the college attended. Mother's (college) education influenced white females' educational attainment through the following major mediating variables: parental income; educational aspirations and the selectivity of the college attended. Table XIV presents the major paths of indirect effects related to intergenerational transmission for all pertinent racial-gender groups.

A comparison of the total effects of the predictor variables on educational attainment, as shown in Table XI, reveals some similarity in influence for the parental education measures within and between groups. For both groups of white subjects, father's education exerted a significant total effect on educational attainment (with a rank of 4 among the significant total effects for both white males and females). Mother's education ranked 8th among the significant total effects for the white males and was a non-significant total effect for the white females. In the black male and female groups, neither parental education variable exerted a significant total effect on the subjects' educational attainment 9 years after college matriculation.

Occupational Status

For the penultimate dependent measure, occupational status, only one variable exerted a significant direct influence for all four groups. As shown in Equation 14 of Tables IV through VII, only educational attainment so affected the dependent variable. Occupational aspirations directly influenced occupational status for both white groups (male and female). Other predictor variables exerted significant direct effects for only one group. Educational aspirations, collegiate major, and institutional enrollment significantly affected occupational status for only the white male subjects. (In the case of educational aspirations, a significant negative beta weight was obtained.) For the black males, a significant negative beta weight was obtained for institutional selectivity.

No evidence was found of a significant direct effect of either parental education variable on occupational status attainment. This was true for all four racial-gender groups.

As presented in Table IX, father's education exerted a significant indirect influence on occupational status for both groups of white subjects, males and females. For the black males only, mother's (college) education indirectly impacted on occupational status attainment.

Table XIV lists the major intervening variables through which mother's or father's education influenced the outcome measures of interest. For the white males, father's

education affected occupational status through the following major mediating variables: educational and occupational aspirations. The major intervening variables through which father's education influenced occupational status for white females were parental income, educational aspirations and selectivity, and educational attainment. In the case of the black males, the effect of mother's education on occupational status was mediated by parental income and institutional selectivity.

As indicated in Table XII, only one significant total effect was obtained for the influence of a parental education variable on occupational status. Mother's education exerted a significant total effect on the occupational status of white females (with a rank of 4 among all of this group's significant total effects).

Income

One variable included in the model had significant direct effects on the income attained by members of all four groups. As shown in Tables IV through VII, institutional selectivity had a significant, positive coefficient in Structural Equation 15 for all racial-gender groups. With respect to the impact of other predictors on the ultimate dependent measure, there was evidence of disparity between groups. Academic major exerted a significant direct effect on income for three groups: white males, white females, and black males. The background variable of parental income

directly affected the personal income of white males and females. Institutional enrollment also exerted a significant direct effect (positive) on the economic attainment of both white groups. College academic achievement directly affected the income attained by white females and black males. Educational attainment evidenced a significant positive coefficient in the structural equation representing the income attained by both groups of females, white and black. Several predictors exerted significant direct effects only for the group of black females; high school academic achievement and occupational aspirations both evidenced positive direct effects on the income attainments of this group of minority females.

In only one racial-gender group did a parental education variable significantly affect income by means of a direct effect. Mother's education had a significant, negative influence on the income attained by black females ($p=.034$).

As shown in Table X, several indirect effects were manifest by parental education variables on income in 1980. Both mother's and father's education indirectly affected the economic attainment of subjects in the white groups (males and females). For these two groups, the indirect effects of both parental education variables were mediated by the variables shown in Table XIV. Mother's education was the only parental education variable that indirectly influenced the

economic attainment of black males and females. As shown in Table X, the positive indirect effect of mother's education was nullified by the negative direct effect, resulting in a total effect that was non-significant.

As shown in Table XIII, there is a significant total effect of a parental education variable on income for only one group. For the white females studied, only father's education exerted a significant total effect on the income attained by these subjects 9 years after matriculation in college. This variable ranked lowest in magnitude among all the significant total (standardized) effects.

Other Dependent Measures

The methodology of causal modeling employed in this research involved the computation of coefficients for 13 structural equations. Results shown in Tables IV through VII also reveal the direct effects of father's and mother's education on dependent variables other than those of prime research interest. Mother's education exerted significant, positive, direct effects on parental income for all four racial-gender groups. Other such effects of mother's education were shown by the significant, positive coefficients in equations for high school academic achievement (black males) and institutional selectivity (white males).

Father's education exerted significant positive direct effects on parental income in the case of three groups:

white males, white females, and black females. Father's education also had positive, significant direct effects on other dependent measures for white males: high school academic achievement, educational aspirations, occupational aspirations, and institutional selectivity. For white females, father's education also exerted a significant, positive direct effect on institutional selectivity.

Conclusions and Discussion

A paraphrasing of the title of this research study suggests the fundamental research question: Is there a documented impact of college graduation on the next generation? If this question is answered only in terms of direct effects, one would conclude to the existence of a very limited impact. Out of a possible 24 direct effects of parental education measures, only two significant effects were obtained.

As hypothesized, parents' college education was found to impact on the next generation by significant indirect paths. A total of 13 significant indirect effects was obtained (out of a possible 24) for mother's or father's education as an influence on their children's educational attainment, occupational status, and income. This finding is congruent with conclusions of earlier college effect studies which substantiated the primary importance of indirect effects of family SES on subsequent status attainments (Smart and Pascarella, 1986; Smart, 1986).

The general finding of a significant impact of parents' college graduation on the next generation (manifested primarily by indirect effects) supports the Matthew Effect (Merton, 1968; Walberg and Tsai, 1983). According to Chapter 25, Verse 29 of Matthew's gospel, those who possess an advantage can expect to gain even further benefit. The present research confirms the intertemporal advantages communicated by college-educated parents to their children. These children's early home lives had been enriched by the benefits accruing from interaction with college-educated parents (Leibowitz, 1974; Bowen, 1977; Walberg, 1986). These youngsters' early advantages get translated into later adult outcomes of education, occupational status, and income---effects determined to be indirectly attributable to parental education variables.

In the current research, the vast majority of significant indirect effects (10 out of 13) were obtained for the white groups. Power has been defined as the ability to bring about change (McClure, 1985). Members of the dominant social group seem to have possessed the power to extend the influence of their education to the next generation and thereby affect its educational attainment, occupational status, and income.

The variables included in the model explained a moderate amount of the variance in the dependent measures. The values for variance explained (Tables IV through VII), however, are

congruent with the paradigmatic findings of Blau and Duncan (1967).

For three out of the four groups (exception: black females), the variables selected for inclusion in the model better explained subjects' educational attainment than their income. This finding is not surprising since the variables were chosen to measure characteristics of students' educational experience: precollege variables, institutional characteristics of the (1971) college, and measures of the collegiate experience. Likewise, Kelley (1973) found that economic rewards of education are often deferred until later in the life cycle.

For black females, there was a substantial difference in the pattern of variance explained compared to the other groups. The variables included in the causal model explained 29% of the variance in income for the black females, compared to a lesser amount (25%) of the variance in this group's educational attainment. Further investigation will be needed to enlighten this between-group difference in the pattern of variance explained.

This research demonstrates the relative importance of students' individual achievements rather than the ascribed advantages of parents' education. A review of Tables XII and XIII will permit conclusions based on the relative ranking of standardized total effects on occupational status and income. Within-group comparisons of these rankings show the

consistent importance in the model of variables representing the individual's own educational attainment compared to those representing measures of parental education. For the occupational status of the career achieved 9 years after college entrance, the individual's own educational attainment was the most influential variable (related to total effects) for all four groups. Similarly, the subjects' educational attainment was shown to be a more important influence on income than the parental education variables in the case of two out of the four groups. For the white and black males, the exceptions, neither the subjects' own educational attainment nor that of their parents exerted significant total effects on income.

In addition to the general conclusions which may be derived from the research results, more specific ones will be summarized and discussed according to the three dependent measures of interest. Additional differences between racial and gender groups will thus be highlighted.

Educational Attainment

Comparisons of between-group and within-group influences on educational attainment serve to elucidate certain family processes that might be involved. For only the two groups of white subjects did both mother's and father's college education exert a significant indirect effect on educational attainment. The greater influence of father's education (versus mother's) for the white subjects was revealed by the magnitude of

standardized effects (indirect and total). This finding may be indicative of the primary importance of the male parent in influencing achievement-oriented outcomes in the white family structure (Willie, 1985). For the white subjects studied, either parent's possession of a baccalaureate degree led to higher family income, the enhancement of educational aspirations, the choice of a more selective undergraduate institution, and higher educational attainment.

Within the two groups of black subjects, only one significant effect was noted of a parental education variable on educational attainment: mother's college education exerted a positive, significant direct effect on the educational attainment of black males. This finding is congruent with those of researchers who have concluded to the centrality of matricentered family processes within the black race (Moynihan, 1965; Thompson, 1974).

Occupational Status

As hypothesized, parental education variables influenced subjects' occupational status attainment only by means of indirect effects. Father's education exerted significant indirect effects on the penultimate dependent variable for white males and females. However, for neither group was the total effect a significant one. The sole significant total effect of the parental experience variables was the cumulative effect of mother's education for white females. The combined positive direct and indirect effects of mother's

education for this group reached statistical significance.

Mother's education was a relatively greater influence on occupational status attainment than father's for the white females studied, as shown by the total effects. This evidence for the importance of the like-sexed parent for the occupational status attained by the white women is in agreement with the findings of Treiman and Terrell (1975). The influence of mother's labor force participation and job status on her daughter's occupational status attainment is in need of further study.

The significant positive indirect effect of mother's education on occupational status attainment for the black males studied may again be related to the dominance of the maternal influence in black family dynamics. This finding is in contradiction to the significant indirect effects found for father's education as an influence on the occupational status achievements of both groups of white subjects.

The primary influence of an individual's own educational attainment on occupational status compared to that of his/her parents is dramatically shown in Table XII. In the group of white females, for example, the total effect of subjects' own education is almost three times the magnitude of the effect of mother's education (standardized total effects of .317 and .121, respectively). In summary, this research quantitatively answers a question posed by Carpenter and Fleichman (1987): To what extent are students' rewarded from

accomplishments other than their individual accomplishments? Results of this research lend support to the meritocratic theory (Burgess, 1986).

Income

According to the proponents of the human capital theory (Becker, 1964), individuals and society make investments in higher education with the expectation that such decisions will "pay off" in the future. The present research attempted to determine whether the investment in college by members of one generation resulted in higher income for members of the next generation. Through use of the methodology of causal modeling, other variables that are determinants of income could be controlled.

For members of only one racial-gender group did a measure of parental education exert a significant, direct effect on income. Black mother's possession of a college degree led to a significant decrease in the income achieved by her daughters nine years after entrance into college. This somewhat paradoxical finding will be considered later with a discussion of the positive indirect effect of mother's education for this group.

Six significant, indirect effects of mother's or father's education were present for income, the most numerous indirect effects for any of the three dependent variables of interest. For both groups of white subjects, mother's and father's education manifested significant indirect effects.

In the case of white females, father's education was a significant total influence on the income earned by the subjects.

The consistent, significant indirect effects of mother's education on the economic attainments of members of all four groups merits further investigation. An important mediating variable of these indirect effects was parental income. Mother's college education may have influenced her children's income through a home environment that included the advantages of a greater quantity of material goods, in accord with the findings of Leibowitz (1974). A desire to continue to enjoy such material advantages may be transmitted from college-educated mothers to their children, leading to vocational decisions designed to maintain an accustomed lifestyle.

One of the most seemingly paradoxical findings of this research with respect to the influences on economic attainment was the significant, negative direct effect of mother's education and the significant, positive indirect effect for black females. Thus, for this group, the influence of mother's college graduation had both an inhibitory and a facilitative component. Directly, college-educated mothers may discourage their daughters from seeking monetary rewards. These highly educated mothers may, instead, encourage their daughters to strive after goals that are personally fulfilling but not directly productive of

increased income. Such college-educated mothers may likewise encourage their daughters to use the advantages of an enhanced family income to attend a selective college, achieve academically in this college, and attain advanced education (the mediating variables) in order to attain goals of self-fulfillment through growth in values, appreciations, and understandings. The academic excellence encouraged by these highly educated mothers would be productive of greater income, an outcome not directly sought after. This explanation of the effects of mother's college education on income for the black subjects demands further investigation.

Implications

Results of this research provide empirical support for the establishment of parent education programs (Becher, 1982). Information related to educational decision-making needs to be particularly communicated to parents who lack successful personal experience with the higher education system. This research also seems to support the development of early home intervention programs, especially those directed toward minority mothers who have not had the advantages of a college education (Gray and Klaus, 1970). Intergenerational, community-based family support programs, as recommended by Reeves (1988), may be a means for better educated community members to transmit the benefits of their education to less educationally advantaged parents and their children.

Results also suggest the importance of college faculty in the transmission of intergenerational status attainments. In general, this research underscores the long term impact of a college education, an impact, which, though primarily indirect, is no less important.

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Table I

Variable Definitions

Student Background Characteristics

1. Father's education. Paternal level of education coded 0=no college graduate; 1=college degree or higher.

2. Mother's education. Maternal level of education coded 0=no college graduate; 1=college degree or higher.

3. Parental income. Parental income in 1971 coded into one of twelve categories, ranging from 1=less than \$4,000 to 12=\$40,000 or more.

Precollege Variables

4. High school academic achievement. Secondary school grades coded 1=D to 8=A, A+.

5. High school social involvement. A counting of involvement in three leadership activities with peers (president of one or more student organizations, had a major part in a high school play, edited a school publication). 0=no or 1=yes. Values ranged from 0 to 3.

6. Educational aspirations. Highest degree expected (1971), coded 1=none; 2=associate; 3=bachelor's; 4=master's; 5=doctorate or advanced professional degree.

7. Occupational aspirations. Student's indication (1971) of probable career converted to occupational status ratings based on Featherman and Stevens' (1982) revision of Duncan's (1961) scale.

Table I (con't)

Institutional Characteristics---1971 College

8. Selectivity. The mean SAT score of the undergraduate student body divided by 10. Possible values ranged from 56 to 143.

9. Size. The total institutional enrollment coded 1=less than 250 students to 9=20,000 or more.

College Experience Variables

10. Collegiate major. Last undergraduate major coded 2=scientific/technical/health/pre-professional or 1=other. This classification corresponds with Biglan's (1973) hard and soft subject areas, respectively.

11. College academic achievement. Average undergraduate grades coded 1=D or less to 6=A-or more.

12. Social leadership. A counting of involvement in four leadership activities while in college (president of a college student organization, service on a university or department committee, had a major part in a college play, edited a college publication). 0=no or 1=yes. Values ranged from 0 to 4.

Outcome Measures---1980

13. Educational attainment. The highest educational degree attained in 1980, coded 1=no college degree; 2=associate degree; 3=bachelor's degree; 4=master's degree; 5=doctorate or advanced professional degree.

Table I (con't)

14. Occupational status. Status of current (1980) occupation, based on Featherman and Steven's (1982) revision of Duncan's (1961) scale.

15. Income. Current (1980) annual income coded into ten categories with 1=none to 10=\$40,000 or more.

TABLE II
MEANS, STANDARD DEVIATIONS AND INTERCORRELATIONS - WHITE SUBJECTS^a

Variable	Males		Females		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	M	SD	M	SD															
1. Father's Education	.36	.48	.38	.49		45	42	13	10	18	13	34	03	05	09	03	20	10	04
2. Mother's Education	.25	.43	.30	.46	47		33	07	12	15	09	25	05	02	06	01	16	07	04
3. Parental Income	6.20	2.51	5.92	2.41	40	29		02	06	19	11	29	07	-07	04	11	17	04	16
4. High School Academic Achievement	5.54	1.61	5.99	1.40	05	05	02		21	29	18	45	12	19	48	07	37	26	15
5. High School Social Involvement	.64	.79	.70	.81	05	04	01	18		17	04	14	-02	-04	17	28	14	09	02
6. Educational Aspirations	4.00	.97	3.57	.88	10	09	18	22	08		43	31	05	11	25	15	36	20	06
7. Occupational Aspirations	71.57	14.21	65.39	12.89	07	05	08	14	03	36		18	06	05	13	07	28	30	06
8. Selectivity	106.09	13.26	102.28	11.52	29	23	30	34	06	29	17		18	17	17	05	33	22	20
9. Size	5.40	1.83	5.12	1.81	-02	-03	06	10	-02	02	04	27		11	04	-14	01	09	16
10. Collegiate Major	1.35	.48	1.26	.44	-03	-05	00	18	-01	06	-07	14	04		07	-11	02	10	14
11. College Academic Achievement	4.69	.95	4.98	.85	05	05	05	50	10	15	09	13	-03	06		12	52	32	11
12. Social Leadership	.53	.80	.64	.82	10	12	09	07	18	10	04	00	-18	-06	16		15	10	03
13. Educational Leadership	3.31	.99	3.15	.82	18	14	18	25	06	32	18	28	-01	06	39	20		57	10
14. Occupational Status	62.16	16.59	61.89	12.78	06	12	10	14	08	22	33	17	01	-03	20	13	40		09
15. Income	5.15	1.47	4.22	1.13	09	01	19	17	04	14	07	28	14	23	19	08	26	14	

^aCorrelations above diagonal are for white men; correlations below diagonal are for white women. Decimals omitted from correlations.

TABLE III
MEANS, STANDARD DEVIATIONS AND INTERCORRELATIONS - BLACK SUBJECTS^a

Variable	Males		Females		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	M	SD	M	SD															
1. Father's Education	.21	.41	.20	.40		59	39	09	08	12	14	05	-04	-01	13	-03	14	06	03
2. Mother's Education	.27	.44	.20	.40	55		55	19	02	20	12	11	04	00	09	-11	19	11	01
3. Parental Income	4.37	2.32	3.82	2.27	45	43		08	02	14	20	21	05	-07	09	-12	16	12	17
4. High School Academic Achievement	4.81	1.63	5.20	1.48	06	11	08		20	23	20	37	10	16	32	-04	20	19	29
5. High School Social Involvement	.65	.78	.56	.75	00	05	-05	21		20	11	10	-23	-03	14	29	14	03	00
6. Educational Aspirations	4.23	.91	3.95	.93	13	12	06	17	10		28	26	-03	-01	17	02	23	17	14
7. Occupational Aspirations	71.48	13.78	67.28	12.91	06	12	12	15	07	30		23	-02	05	11	-08	19	17	17
8. Selectivity	99.45	21.29	93.65	20.84	14	14	23	29	09	23	20		20	05	-07	-10	24	01	33
9. Size	5.78	1.58	5.77	1.65	01	01	01	05	05	-04	00	30		-06	-23	-25	-06	-09	11
10. Collegiate Major	1.26	.44	1.18	.38	01	06	03	20	-06	-01	-13	02	05		-11	-09	-06	00	16
11. College Academic Achievement	4.10	1.01	4.42	.90	05	04	05	24	06	20	08	-13	-19	-05		20	52	33	21
12. Social Leadership	.87	.99	.64	.83	-04	05	03	10	25	17	12	06	-15	-12	22		14	08	-01
13. Educational Attainment	3.31	1.00	3.23	.92	15	17	13	31	16	24	21	21	-04	-06	33	24		48	23
14. Occupational Status	61.20	16.49	61.79	13.14	07	05	06	17	04	15	19	03	-02	-04	20	07	42		14
15. Income	4.97	1.26	4.27	1.02	03	-01	08	32	08	11	21	32	11	06	19	17	40	21	

^aCorrelations above diagonal are for black men; correlations below diagonal are for black women. Decimals omitted from correlations.

TABLE IV
STRUCTURAL EQUATIONS FOR WHITE MALES (n=1090)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Father's Education	.338*** (1.770)	.134*** (.450)	.063 (.103)	.095** (.192)	.094** (2.796)	.169*** (4.682)	-.032 (-.122)	.043 (.043)	.031 (.061)	-.034 (-.058)	.025 (.051)	-.008 (-.269)	-.076 (-.234)
2. Mother's Education	.178*** (1.027)	.023 (.085)	.086 (.156)	.062 (.139)	.026 (.866)	.077** (2.341)	.037 (.159)	.007 (.007)	.015 (.034)	-.050 (-.093)	.037 (.084)	-.003 (-.105)	-.017 (-.059)
3. Parental Income		-.039 (-.025)	.008 (.003)	.128*** (.049)	.060 (.339)	.160*** (.846)	.067 (.049)	-.140*** (-.027)	.011 (.004)	.104** (.033)	.039 (.015)	-.060 (-.399)	.163*** (.095)
4. High School Academic Achievement						.387*** (3.193)	.122*** (.138)	.125*** (.037)	.479*** (.284)	.016 (.008)	.037 (.022)	.018 (.181)	.040 (.036)
5. High School Social Involvement						-.005 (-.076)	-.048 (-.111)	-.095** (-.058)	.051 (.062)	.258*** (.264)	-.010 (-.013)	.009 (.190)	-.008 (-.015)
6. Educational Aspirations						.124*** (1.704)	-.004 (-.008)	.079 (.039)	.137*** (.135)	.097** (.081)	.123*** (.126)	-.097*** (-1.658)	-.060 (-.090)
7. Occupational Aspirations						.006 (.005)	.033 (.004)	-.018 (-.001)	-.009 (-.001)	.024 (.001)	.126*** (.009)	.183*** (.213)	.027 (.003)
8. Selectivity								.118** (.004)	-.106** (-.008)	.011 (.001)	.172*** (.013)	.018 (.023)	.126*** (.014)
9. Size								.080** (.021)	-.000 (-.000)	-.137*** (-.060)	-.047 (-.026)	.073** (.667)	.114*** (.092)
10. Collegiate Major									-.017 (-.034)	-.091** (-.153)	-.054 (-.113)	.080** (2.760)	.121*** (.372)

TABLE IV (continued)
STRUCTURAL EQUATIONS FOR WHITE MALES (n=1090)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15
11. College Academic Achievement											.421*** (.437)	.022 (.392)	.069 (.107)
12. Social Leadership											.048 (.059)	.036 (.745)	.036 (.066)
13. Educational Attainment												.534*** (8.976)	-.004 (-.006)
14. Occupational Status													.012 (.001)
15. Income													
R ²	.20	.02	.02	.05	.02	.34	.02	.08	.26	.13	.39	.37	.10

^aTop number is the standardized coefficient; number in parenthesis is the unstandardized coefficient.

p<.01; *p<.001.

TABLE V
STRUCTURAL EQUATIONS FOR WHITE FEMALES (n=983)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15	
1. Father's Education	.333*** (1.651)	.036 (.104)	.038 (.063)	.012 (.022)	.033 (.864)	.152*** (3.605)	-.035 (-.131)	-.030 (-.027)	.016 (.027)	.041 (.060)	.066 (.110)	-.071 (-1.888)	.000 (-.001)	
2. Mother's Education	.135*** (.712)	.036 (.110)	.032 (.057)	.035 (.068)	.021 (.605)	.079 (2.005)	-.039 (-.153)	-.061 (-.059)	.013 (.024)	.066 (.119)	.008 (.015)	.080 (2.238)	-.086 (-.213)	
3. Parental Income		-.003 (-.002)	-.018 (-.006)	.170*** (.062)	.057 (.305)	.178*** (.849)	.086 (.065)	-.009 (-.002)	.041 (.014)	.060 (.020)	.042 (.014)	.013 (.067)	.120*** (.056)	
4. High School Academic Achievement						.289*** (2.372)	.112*** (.144)	.161*** (.050)	.521*** (.314)	.062 (.036)	-.031 (-.018)	-.020 (-.181)	-.016 (-.013)	
5. High School Social Involvement						-.020 (-.282)	-.036 (-.080)	-.045 (-.024)	.001 (.001)	.153*** (.154)	-.017 (-.017)	.039 (.606)	.016 (.023)	
6. Educational Aspirations						.163*** (2.125)	-.020 (-.041)	.049 (.024)	.041 (.039)	.070 (.065)	.183*** (.169)	.006 (.090)	-.006 (-.008)	
7. Occupational Aspirations						.041 (.037)	.027 (.004)	-.124*** (-.004)	.005 (.000)	-.003 (-.000)	.055 (.003)	.256*** (.254)	.003 (.000)	
8. Selectivity									.119** (.004)	-.056 (-.004)	-.042 (-.003)	.160*** (.011)	.032 (.036)	.162*** (.016)
9. Size									-.005 (-.001)	-.070 (-.033)	-.169*** (-.077)	-.029 (-.013)	.012 (.085)	.094** (.059)
10. Collegiate Major										-.029 (-.056)	-.055 (-.102)	.025 (.047)	-.032 (-.931)	.191*** (.494)

TABLE V (continued)
STRUCTURAL EQUATIONS FOR WHITE FEMALES (n=983)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15
11. College Academic Achievement											.328*** (.317)	.052 (.779)	.096** (.128)
12. Social Leadership											.118*** (.117)	.040 (.623)	.055 (.076)
13. Educational Attainment												.317*** (4.959)	.134*** (.185)
14. Occupational Status													.037 (.003)
15. Income													
R ²	.17	.00	.00	.04	.01	.27	.02	.06	.26	.09	.28	.24	.18

^aTop number is the standardized coefficient; number in parenthesis is the unstandardized coefficient.

P<.01; *p<.001.

TABLE VI
STRUCTURAL EQUATIONS FOR BLACK MALES (n=182)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Father's Education	.107 (.605)	-.038 (-.150)	.107 (.201)	-.003 (-.008)	.080 (2.668)	-.037 (-1.898)	-.062 (-.237)	-.000 (-.000)	.105 (.257)	.024 (.059)	-.031 (-.075)	-.046 (-1.841)	.017 (.051)
2. Mother's Education	.483*** (2.518)	.237* (.870)	-.045 (-.078)	.181 (.370)	-.018 (-.548)	-.089 (-4.256)	.022 (.077)	.028 (.027)	-.103 (-.233)	-.075 (-.166)	.169* (.381)	-.031 (-1.147)	-.170 (-.483)
3. Parental Income		-.039 (-.027)	.003 (.001)	.046 (.018)	.175* (1.042)	.210* (1.928)	.063 (.043)	-.099 (-.019)	.095 (.041)	-.065 (-.027)	-.036 (-.016)	.093 (.659)	.165 (.090)
4. High School Academic Achievement						.316*** (4.117)	.153* (.149)	.183* (.049)	.421*** (.260)	-.015 (-.009)	-.138 (-.084)	.152 (1.538)	.104 (.081)
5. High School Social Involvement						-.007 (-.180)	-.255*** (-.518)	-.091 (-.051)	-.017 (-.023)	.264*** (.335)	.031 (.040)	-.078 (-1.662)	-.074 (-.121)
6. Educational Aspirations						.152* (3.554)	-.017 (-.030)	-.051 (-.025)	.107 (.119)	.019 (.021)	.037 (.041)	.067 (1.209)	.021 (.030)
7. Occupational Aspirations						.103 (.160)	-.028 (-.003)	.044 (.001)	.025 (.002)	-.078 (-.006)	.070 (.005)	.077 (.093)	.047 (.004)
8. Selectivity								.034 (.001)	-.211** (-.010)	-.048 (-.002)	.291*** (.014)	-.192* (-.149)	.245** (.015)
9. Size								-.102 (-.028)	-.233*** (-.149)	-.174* (-.019)	.039 (.025)	-.049 (-.515)	.107 (.086)
10. Collegiate Major									-.177** (-.402)	-.084 (-.188)	.010 (.023)	.009 (.353)	.174* (.496)

TABLE VI (continued)
STRUCTURAL EQUATIONS FOR BLACK MALES (n=182)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15
11. College Academic Achievement											.556*** (.553)	.001 (.018)	.192* (.242)
12. Social Leadership											.070 (.071)	.025 (.422)	.043 (.056)
13. Educational Attainment												.470*** (7.744)	.040 (.051)
14. Occupational Status													.036 (.003)
15. Income													
R ²	.31	.04	.01	.04	.04	.21	.08	.05	.25	.16	.39	.29	.24

^aTop number is the standardized coefficient; number in parenthesis is the unstandardized coefficient.

*P<.05; **P<.01; ***p<.001.

TABLE VII
STRUCTURAL EQUATIONS FOR BLACK FEMALES (n=284)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Father's Education	.314*** (1.764)	-.017 (-.061)	-.005 (-.009)	.100 (.231)	-.035 (-1.115)	.019 (.992)	.006 (.025)	-.035 (-.033)	.014 (.032)	-.126 (-.259)	.066 (.150)	.022 (.704)	.021 (.054)
2. Mother's Education	.255*** (1.431)	.103 (.378)	.092 (.171)	.078 (.180)	.099 (3.165)	-.012 (-.615)	.005 (.019)	.069 (.065)	-.023 (-.052)	.067 (.137)	.061 (.138)	-.048 (-1.569)	-.135* (-.341)
3. Parental Income		.045 (.029)	-.091 (-.030)	-.023 (-.009)	.094 (.535)	.192** (1.767)	.006 (.004)	.020 (.003)	.079 (.032)	.053 (.020)	.005 (.002)	.021 (.121)	.005 (.002)
4. High School Academic Achievement						.232*** (3.273)	.049 (.055)	.238*** (.062)	.302*** (.184)	.038 (.021)	.169** (.105)	.057 (.511)	.132* (.091)
5. High School Social Involvement						.034 (.945)	.049 (.107)	-.098 (-.050)	.003 (.004)	.232*** (.256)	.047 (.057)	-.029 (-.503)	-.028 (-.038)
6. Educational Aspirations						.146* (3.270)	-.063 (-.111)	.009 (.004)	.192** (.185)	.111 (.099)	.065 (.064)	.040 (.561)	-.081 (-.088)
7. Occupational Aspirations						.095 (.153)	.011 (.001)	-.158* (-.005)	.001 (.000)	.040 (.003)	.086 (.006)	.114 (.116)	.118* (.009)
8. Selectivity								-.033 (-.001)	-.241*** (-.010)	.041 (.002)	.135* (.006)	-.091 (-.057)	.220*** (.011)
9. Size								.051 (.012)	-.118* (-.065)	-.168** (-.085)	-.022 (-.012)	.022 (.174)	.081 (.050)
10. Collegiate Major									-.102 (-.238)	-.100 (-.217)	-.055 (-.133)	-.012 (-.428)	.074 (.197)

TABLE VII (continued)
STRUCTURAL EQUATIONS FOR BLACK FEMALES (n=284)^a

Variable	3	4	5	6	7	8	9	10	11	12	13	14	15
11. College Academic Achievement											.243*** (.249)	.048 (.707)	.107 (.121)
12. Social Leadership											.116* (.128)	-.042 (-.660)	.089 (.109)
13. Educational Attainment												.391*** (5.578)	.264*** (.292)
14. Occupational Status													.037 (.003)
15. Income													
R ²	.25	.01	.01	.02	.02	.17	.01	.08	.17	.14	.25	.21	.29

^aTop number is the standardized coefficient; number in parenthesis is the unstandardized coefficient.

*P<.05; **P<.01; ***p<.001.

TABLE VIII

DIRECT, INDIRECT, AND TOTAL EFFECTS OF
FATHER'S AND MOTHER'S EDUCATION ON EDUCATIONAL ATTAINMENT^a

	Direct	Indirect	Total
WHITE MALES (N=1090)			
Father's Education	.025 (.051)	.131*** (.270)	.156*** (.321)
Mother's Education	.037 (.084)	.052** (.118)	.089** (.202)
WHITE FEMALES (N=983)			
Father's Education	.066 (.110)	.085*** (.143)	.150*** (.253)
Mother's Education	.008 (.015)	.057** (.103)	.066 (.118)
BLACK MALES (N=182)			
Father's Education	-.031 (-.075)	.078 (.188)	.046 (.113)
Mother's Education	.169* (.381)	-.002 (-.005)	.167 (.376)
BLACK FEMALES (N=284)			
Father's Education	.066 (.150)	.016 (.037)	.082 (.187)
Mother's Education	.061 (.138)	.063 (.144)	.124 (.282)

^aTob number is the standardized coefficient; number in parentheses is the unstandardized coefficient.

*p<.05; **p<.01; ***p<.001.

TABLE IX
DIRECT, INDIRECT, AND TOTAL EFFECTS OF
FATHER'S AND MOTHER'S EDUCATION ON OCCUPATIONAL STATUS^a

	Direct	Indirect	Total
WHITE MALES (N=1090)			
Father's Education	-.008 (-.269)	.086*** (2.965)	.078 (2.696)
Mother's Education	-.003 (-.105)	.043 (1.627)	.040 (1.522)
WHITE FEMALES (N=983)			
Father's Education	-.071 (-1.888)	.078*** (2.054)	.007 (.166)
Mother's Education	.080 (2.238)	.041 (1.152)	.121*** (3.390)
BLACK MALES (N=182)			
Father's Education	-.046 (-1.841)	.034 (1.364)	-.012 (-.476)
Mother's Education	-.031 (-1.147)	.148* (5.472)	.117 (4.325)
BLACK FEMALES (N=284)			
Father's Education	.022 (.704)	.041 (1.321)	.062 (2.024)
Mother's Education	-.048 (-1.569)	.063 (2.041)	.014 (.472)

^aTob number is the standardized coefficient; number in parentheses is the unstandardized coefficient.

*p<.05; **p<.01; ***p<.001.

TABLE X
DIRECT, INDIRECT, AND TOTAL EFFECTS OF
FATHER'S AND MOTHER'S EDUCATION ON INCOME^a

	Direct	Indirect	Total
WHITE MALES (N=1090)			
Father's Education	-.076 (-.234)	.104*** (.318)	.028 (.084)
Mother's Education	-.017 (-.059)	.048*** (.160)	.030 (.101)
WHITE FEMALES (N=983)			
Father's Education	.000 (-.001)	.104*** (.242)	.104** (.241)
Mother's Education	-.086 (-.213)	.047** (.115)	-.039 (-.097)
BLACK MALES (N=182)			
Father's Education	.017 (.051)	.021 (.066)	.038 (.117)
Mother's Education	-.170 (-.483)	.161* (.457)	-.009 (-.026)
BLACK FEMALES (N=284)			
Father's Education	.022 (.054)	.031 (.079)	.053 (.133)
Mother's Education	-.135* (-.341)	.094* (.236)	-.042 (-.105)

^aTob number is the standardized coefficient; number in parentheses is the unstandardized coefficient.

*p<.05; **p<.01; ***p<.001.

TABLE XI
INDIRECT AND TOTAL EFFECTS OF PREDICTOR VARIABLES ON EDUCATIONAL ATTAINMENT^a

Variables	White Males			White Females			Black Males			Black Females		
	I	T	Rank ^b	I	T	Rank	I	T	Rank	I	T	Rank
1. Father's Education	.131*** (.270)	.156*** (.321)	4	.085*** (.143)	.150*** (.253)	4	.078 (.188)	.046 (.113)		.016 (.037)	.082 (.187)	
2. Mother's Education	.052** (.118)	.089** (.202)	8	.057** (.103)	.066 (.118)		-.002 (-.005)	.167 (.376)		.063 (.144)	.124 (.282)	
3. Parental Income	.056** (.022)	.094** (.037)	7	.080*** (.027)	.122*** (.041)	6	.105 (.045)	.069 (.030)		.050 (.020)	.056 (.023)	
4. High School Academic Achievement	.233*** (.144)	.270*** (.166)	2	.212*** (.123)	.180*** (.105)	3	.254*** (.156)	.117 (.072)		.072* (.045)	.240*** (.150)	2
5. High School Social Involvement	.043** (.054)	.032 (.041)		.018 (.018)	.001 (.001)		.040 (.051)	.071 (.092)		.036 (.044)	.083 (.101)	
6. Educational Aspirations	.072*** (.074)	.195*** (.199)	3	.046*** (.043)	.228*** (.212)	2	.093* (.102)	.130 (.143)		.076** (.075)	.140* (.139)	3
7. Occupational Aspirations	-.003 (-.000)	.123*** (.009)	5	.004 (.000)	.059 (.004)		.024 (.002)	.094 (.007)		.027 (.002)	.112 (.008)	
8. Selectivity	-.052*** (-.004)	.120*** (.009)	6	-.022 (-.002)	.138*** (.010)	5	-.124** (-.006)	.167* (.008)	2	-.051* (-.002)	.084 (.004)	
9. Size	-.012 (-.006)	-.059 (-.032)		-.043*** (-.019)	-.071 (-.032)		-.133** (-.084)	-.093 (-.059)		-.053** (-.030)	-.075 (-.042)	
10. Collegiate Major	-.012 (-.024)	-.066 (-.137)		-.016 (-.030)	.009 (.017)		-.104** (-.236)	-.094 (-.212)		-.036* (-.087)	-.092 (-.220)	

TABLE XI (continued)
INDIRECT AND TOTAL EFFECTS OF PREDICTOR VARIABLES ON EDUCATIONAL ATTAINMENT^a

Variables	White Males			White Females			Black Males			Black Females		
	I	T	Rank ^b	I	T	Rank	I	T	Rank	I	T	Rank
11. College Academic Achievement		.421*** (.437)	1		.328*** (.316)	1		.556*** (.553)	1		.243*** (.249)	1
12. Social Leadership		.048 (.059)			.118*** (.118)	7		.070 (.071)			.116* (.128)	4

^aTop number is standardized effect; number in parentheses is unstandardized effect.

^bRank of significant total effects is based on the standardized effects.

*p<.05; **p<.01; ***p<.001.

TABLE XII
INDIRECT AND TOTAL EFFECTS OF PREDICTOR VARIABLES ON OCCUPATIONAL STATUS^a

Variables	White Males			White Females			Black Males			Black Females		
	I	T	Rank ^b	I	T	Rank	I	T	Rank	I	T	Rank
1. Father's Education	.086*** (2.965)	.078 (2.696)		.078*** (2.054)	.007 (.166)		.034 (1.364)	-.012 (-.476)		.041 (1.321)	.062 (2.024)	
2. Mother's Education	.043 (1.627)	.040 (1.522)		.041 (1.152)	.121*** (3.390)	4	.148* (5.472)	.117 (4.325)		.063 (2.041)	.014 (.472)	
3. Parental Income	.052 (.340)	-.009 (-.059)		.064*** (.340)	.077 (.407)		-.006 (-.040)	.087 (.619)		.018 (.104)	.039 (.225)	
4. High School Academic Achievement	.184*** (1.900)	.201*** (2.081)	4	.088*** (.799)	.068 (.617)		-.013 (-.133)	.139 (1.405)		.081* (.722)	.138* (1.232)	4
5. High School Social Involvement	.017 (.356)	.026 (.545)		.007 (.115)	.046 (.721)		.055 (1.158)	-.024 (-.504)		.022 (.378)	-.007 (-.125)	
6. Educational Aspirations	.120*** (2.053)	.023 (.395)		.079*** (1.150)	.086** (1.241)	5	.033 (.599)	.100 (1.807)		.043 (.604)	.083 (1.164)	
7. Occupational Aspirations	.068*** (.079)	.250*** (.292)	2	.024 (.024)	.280*** (.278)	2	.024 (.029)	.101 (.121)		.035 (.036)	.148* (.151)	2
8. Selectivity	.071*** (.089)	.089 (.112)		.035 (.039)	.067 (.074)		.077 (.060)	-.115 (-.089)		.020 (.013)	-.071 (-.045)	
9. Size	-.030 (-.278)	.043 (.390)		-.033** (-.232)	-.021 (-.147)		-.049 (-.513)	-.099 (-1.027)		-.029 (-.228)	-.007 (-.055)	
10. Collegiate Major	-.039 (-1.356)	.040 (1.403)		-.001 (-.022)	-.032 (-.954)		-.046 (-1.732)	-.037 (-1.379)		-.037 (-1.250)	-.049 (-1.677)	

TABLE XII (continued)
INDIRECT AND TOTAL EFFECTS OF PREDICTOR VARIABLES ON OCCUPATIONAL STATUS^a

Variables	White Males			White Females			Black Males			Black Females		
	I	T	Rank ^b	I	T	Rank	I	T	Rank	I	T	Rank
11. College Academic Achievement	.225*** (3.923)	.248*** (4.315)	3	.104*** (1.570)	.156*** (2.348)	3	.261*** (4.284)	.262** (4.303)	2	.095*** (1.387)	.143* (2.095)	3
12. Social Leadership	.026 (.530)	.062 (1.276)		.037*** (.582)	.077 (1.205)		.033 (.548)	.058 (.970)		.045 (.715)	.004 (.055)	
13. Educational Attainment		.534*** (8.976)	1		.317*** (4.959)	1		.470*** (7.744)	1		.391*** (5.578)	1

^aTop number is standardized effect; number in parenthesis is unstandardized effect.

^bRank of significant total effects is based on the standardized effects.

*p<.05; **p<.01; ***p<.001.

TABLE XIII
INDIRECT AND TOTAL EFFECTS OF PREDICTOR VARIABLES ON INCOME^a

Variables	White Males			White Females			Black Males			Black Females		
	I	T	Rank ^b	I	T	Rank	I	T	Rank	I	T	Rank
1. Father's Education	.104*** (.318)	.028 (.084)		.104*** (.242)	.104** (.241)	7	.021 (.066)	.038 (.117)		.031 (.079)	.053 (.133)	
2. Mother's Education	.048*** (.160)	.030 (.101)		.047** (.115)	-.039 (-.097)		.161* (.457)	-.009 (-.026)		.094* (.236)	-.042 (-.105)	
3. Parental Income	.010 (.006)	.173*** (.101)	1	.068*** (.032)	.188*** (.088)	2	.059 (.032)	.224** (.122)	3	.092* (.041)	.097 (.044)	
4. High School Academic Achievement	.116*** (.106)	.155*** (.142)	2	.170*** (.136)	.154*** (.124)	4	.187*** (.144)	.291*** (.225)	1	.166*** (.114)	.298*** (.206)	1
5. High School Social Involvement	-.004 (-.008)	-.012 (-.023)		-.004 (-.006)	.012 (.016)		-.014 (-.023)	-.088 (-.144)		.047 (.063)	.019 (.026)	
6. Educational Aspirations	.038** (.057)	-.022 (-.033)		.078*** (.100)	.072 (.092)		.054 (.075)	.076 (.105)		.096*** (.105)	.015 (.017)	
7. Occupational Aspirations	.006 (.001)	.032 (.033)		.005 (.001)	.008 (.001)		.035 (.003)	.082 (.008)		.049 (.004)	.168** (.013)	5
8. Selectivity	.008 (.001)	.133*** (.015)	3	.035** (.004)	.198*** (.019)	1	-.036 (-.002)	.209** (.012)	4	-.004 (-.000)	.216*** (.010)	3
9. Size	.005 (.004)	.119*** (.096)	4	-.027** (-.017)	.067 (.042)		-.074* (-.059)	.034 (.027)		-.045 (-.028)	.037 (.023)	
10. Collegiate Major	-.004 (-.012)	.118*** (.360)	5	-.006 (-.015)	.185*** (.479)	3	-.043* (-.122)	.131 (.374)		-.046* (-.122)	.029 (.076)	

TABLE XIII (continued)
INDIRECT AND TOTAL EFFECTS OF PREDICTOR VARIABLES ON INCOME^a

Variables	White Males			White Females			Black Males			Black Females		
	I	T	Rank ^b	I	T	Rank	I	T	Rank	I	T	Rank
11. College Academic Achievement	.001 (.002)	.071 (.109)		.050*** (.066)	.146*** (.194)	6	.032 (.040)	.224** (.282)	3	.070** (.079)	.177** (.200)	4
12. Social Leadership	.001 (.001)	.037 (.067)		.019** (.026)	.074 (.102)		.005 (.006)	.048 (.062)		.031 (.038)	.120* (.146)	6
13. Educational Attainment	.006 (.010)	.003 (.004)		.012 (.016)	.146*** (.202)	6	.017 (.022)	.057 (.072)		.014 (.016)	.279*** (.308)	2
14. Occupational Status		.012 (.001)			.037 (.003)			.036 (.003)			.037 (.003)	

^aTop number is standardized effect; number in parenthesis is unstandardized effect.

^bRank of significant total effects is based on the standardized effects.

*p<.05; **p<.01; ***p<.001.

TABLE XIV
MAJOR PATHS OF SIGNIFICANT INDIRECT EFFECTS

Predictor Variables	Dependent Variable	Equation	Intervening Variables
1. Father's Education	Educational Attainment	White Males	Educational Aspirations; Occupational Aspirations; Selectivity
2. Mother's Education	Educational Attainment	White Males	Selectivity
3. Father's Education	Educational Attainment	White Females	Selectivity
4. Mother's Education	Educational Attainment	White Females	Parental Income; Educational Aspirations and Selectivity
5. Father's Education	Occupational Status	White Males	Educational Aspirations; Occupational Aspirations
6. Father's Education	Occupational Status	White Females	Parental Income; Educational Aspirations and Selectivity; Educational Attainment
7. Mother's Education	Occupational Status	Black Males	Parental Income and High School Academic Achievement; Selectivity
8. Father's Education	Income	White Males	Parental Income; Selectivity
9. Mother's Education	Income	White Males	Parental Income; Selectivity
10. Father's Education	Income	White Females	Parental Income; Selectivity
11. Mother's Education	Income	White Females	Parental Income
12. Mothers Education	Income	Black Males	Parental Income and Selectivity
13. Mother's Education	Income	Black Females	Parental Income and Selectivity